

R E M A R K S

The cross-reference to applicants' parent application at p. 1 of the specification has been updated to set forth the number of the patent granted thereon, as required in the Office Action.

Claims 1 - 7 and 16 - 29 are in the application. Of these, claims 16 - 29 have been allowed. Claims 1 - 7 have been rejected under 35 U.S.C. §112, second paragraph, for failure of claim 1 to recite the unit of the value for push-pull signal. A corresponding objection has been made to the specification at p. 23.

In response, applicants respectfully submit that the value of push-pull signal has no unit.

Push-pull signal is calculated from the current of a bi-block photodiode, which is divided into two blocks in the track direction, when the photodiode is moved in the direction perpendicular to the track direction. Specifically, push-pull signal is determined by the following equation:

$$\text{push-pull} = \frac{\text{current of differential signal of photodiode}}{\text{current of sum of signals of photodiode}}$$

Therefore push-pull signal has no unit. This is believed to be well known to persons skilled in the art. In further explanation of push-pull, reference may be made to the following figure:

24.3 Definition of signals

All signals are linearly related to currents through a photo detector, and are therefore linearly related to the optical power falling on the detector.*

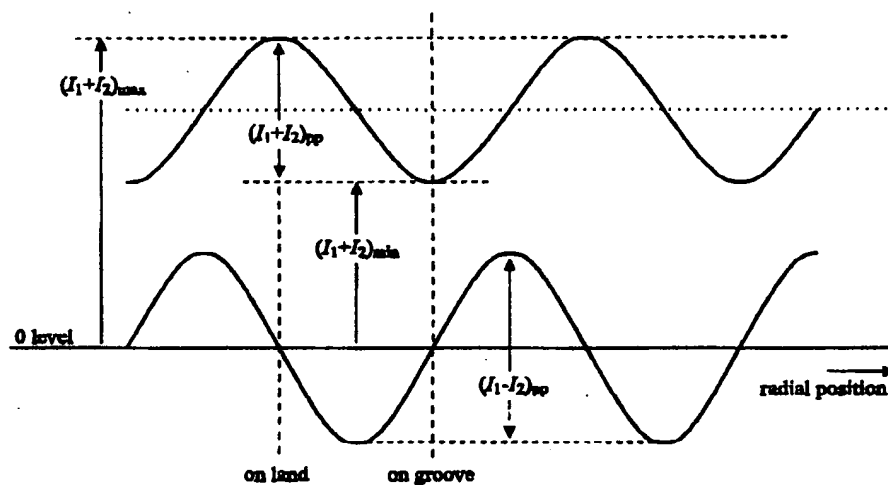


Figure 26 - Signals from grooves in the Read Channels when crossing the tracks

Push-pull signal

The push-pull signal is the filtered sinusoidal difference signal $(I_1 - I_2)$ in Read Channel 2, when the focus of the optical beam crosses the tracks. The signal can be used by the drive for radial tracking.

Track cross signal

The track cross signal is the filtered sinusoidal sum signal $(I_1 + I_2)$ in Read Channel 1, when the focus of the optical beam crosses the tracks.

Wobble signal

The wobble signal I_W is the filtered sinusoidal difference signal $(I_1 - I_2)$ in Read Channel 2, while the drive meets the minimum tracking requirement.

For the foregoing reasons, withdrawal of the rejection of claims 1 - 7 and the objection to the specification, and allowance of the application, are courteously requested.

Respectfully,

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I hereby certify that this paper is being deposited this date with the U.S. Postal Service as first class mail addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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